

PCT REQUEST

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29 APR 2003

P01090WO1A

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| 0 | For receiving Office use only | |
| 0-1 | International Application No. | |
| 0-2 | International Filing Date | |
| 0-3 | Name of receiving Office and "PCT International Application" | |
| 0-4 | Form - PCT/RO/101 PCT Request | |
| 0-4-1 | Prepared using | PCT-EASY Version 2.92 (updated 01.07.2003) |
| 0-5 | Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty | |
| 0-6 | Receiving Office (specified by the applicant) | United States Patent and Trademark Office (USPTO) (RO/US) |
| 0-7 | Applicant's or agent's file reference | P01090WO1A |
| I | Title of invention | THE USE OF SULFUR CONTAINING INITIATORS FOR ANIONIC POLYMERIZATION OF MONOMERS |
| II | Applicant | |
| II-1 | This person is: | applicant only |
| II-2 | Applicant for | all designated States except US |
| II-4 | Name | BRIDGESTONE CORPORATION |
| II-5 | Address: | 10-1, Kyobashi 1-Chome Chuo-Ku Tokyo, Tokyo 104 Japan |
| II-6 | State of nationality | JP |
| II-7 | State of residence | JP |
| II-8 | Telephone No. | + 81 (422) 56-3411 |
| II-9 | Facsimile No. | + 81 (422) 56-3412 |
| III-1 | Applicant and/or inventor | |
| III-1-1 | This person is: | applicant and inventor |
| III-1-2 | Applicant for | US only |
| III-1-4 | Name (LAST, First) | HOGAN, Terrence |
| III-1-5 | Address: | 557 Westminster Circle Akron, OH 44319 United States of America |
| III-1-6 | State of nationality | US |
| III-1-7 | State of residence | US |

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| III-1-4 | Name (LAST, First) | HOGAN, Terrence |
| III-1-5 | Address: | 557 Westminster Circle Akron, OH 44319 United States of America |
| III-1-6 | State of nationality | US |
| III-1-7 | State of residence | US |

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| 1-4-1 | Title of the invention | THE USE OF SULFUR CONTAINING INITIATORS FOR ANIONIC POLYMERIZATION OF MONOMERS |
| 1-4-2 | Applicant's or agent's file reference | P1090W01A |
| 1-4-3 | International application number (if already available) | |
| 1-4-4 | filed with the following Office as receiving Office | United States Patent and Trademark Office (USPTO) (RO/US) |
| 1-5 | and to make or receive payments on behalf of the undersigned. | |

Certificate of Express Mailing

Pursuant to 37 CFR 1.10 I certify that this PCT application is being deposited on the date indicated below with the United States Postal Service "Express Mail Post Office to Addressee" service addressed to: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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|--------------------------------|
| Express Mail Mailing Label No. |
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| Date of Deposit |
| <i>October 30, 2003</i> |

| |
|---|
| Signature of Person Mailing Application |
| <i>Meredith E. Palmer</i> |
| Meredith E. Palmer |


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| | | |
|---------|--|---|
| III-2 | Applicant and/or inventor | |
| III-2-1 | This person is: | applicant and inventor |
| III-2-2 | Applicant for | US only |
| III-2-4 | Name (LAST, First) | HERGENROTHER, William |
| III-2-5 | Address: | 195 Dorchester Road Akron, OH 44313 United States of America |
| III-2-6 | State of nationality | US |
| III-2-7 | State of residence | US |
| III-3 | Applicant and/or inventor | |
| III-3-1 | This person is: | applicant and inventor |
| III-3-2 | Applicant for | US only |
| III-3-4 | Name (LAST, First) | YAN, Yuan-Yong |
| III-3-5 | Address: | 613 Redfield Lane Copley, OH 44321 United States of America |
| III-3-6 | State of nationality | CN |
| III-3-7 | State of residence | US |
| III-4 | Applicant and/or inventor | |
| III-4-1 | This person is: | applicant and inventor |
| III-4-2 | Applicant for | US only |
| III-4-4 | Name (LAST, First) | LAWSON, David |
| III-4-5 | Address: | 11621 Garden Lane, N.W. Uniontown, OH 44685 United States of America |
| III-4-6 | State of nationality | US |
| III-4-7 | State of residence | US |
| IV-1 | Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: | agent |
| IV-1-1 | Name | VASUTA |
| IV-1-2 | Address: | Bridgestone Americas Holding, Inc. 1200 Firestone Parkway Akron, OH 44317 United States of America |
| IV-1-3 | Telephone No. | 330-379-6850 |
| IV-1-4 | Facsimile No. | 330-379-4064 |
| IV-1-5 | e-mail | iplaw@bfusa.com |
| IV-2 | Additional agent(s) | additional agent(s) with same address as first named agent |
| IV-2-1 | Name(s) | PALMER, Meredith(47,839); HUBER, Michael(44,783); KROGH, Timothy(40,688) |

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|---------------|---|---|
| IV-3 | Additional agent(s) | agent |
| IV-3-1 | Name (LAST, First) | BOBAK, Donald |
| IV-3-2 | Address: | First National Tower Fourth Floor Akron, OH 44308 United States of America |
| IV-3-3 | Telephone No. | 330-376-1242 |
| IV-3-4 | Facsimile No. | 330-376-9646 |
| IV-3-5 | e-mail | djbobak@rennerkenner.com |
| IV-3-6 | Agent's registration No. | 27,182 |
| V | Designation of States | |
| V-1 | Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned) | EP: AT BE BG CH&LI CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR and any other State which is a Contracting State of the European Patent Convention and of the PCT |
| V-2 | National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned) | JP US |
| V-5 | Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. | |
| V-6 | Exclusion(s) from precautionary designations | NONE |
| VI-1 | Priority claim of earlier national application | |
| VI-1-1 | Filing date | 30 October 2002 (30.10.2002) |
| VI-1-2 | Number | 60/422,461 |
| VI-1-3 | Country | US |
| VI-2 | Priority claim of earlier national application | |
| VI-2-1 | Filing date | 18 March 2003 (18.03.2003) |
| VI-2-2 | Number | 60/455,508 |
| VI-2-3 | Country | US |
| VI-3 | Priority document request | |
| | The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s): | VI-2 |

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|--------|--|--|-----------------------------|
| VII-1 | International Searching Authority Chosen | European Patent Office (EPO) (ISA/EP) | |
| VIII | Declarations | Number of declarations | |
| VIII-1 | Declaration as to the identity of the inventor | - | |
| VIII-2 | Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent | - | |
| VIII-3 | Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application | - | |
| VIII-4 | Declaration of inventorship (only for the purposes of the designation of the United States of America) | - | |
| VIII-5 | Declaration as to non-prejudicial disclosures or exceptions to lack of novelty | - | |
| IX | Check list | number of sheets | electronic file(s) attached |
| IX-1 | Request (including declaration sheets) | 5 | - |
| IX-2 | Description | 39 | - |
| IX-3 | Claims | 6 | - |
| IX-4 | Abstract | 1 | EZABST00.TXT |
| IX-5 | Drawings | 0 | - |
| IX-7 | TOTAL | 51 | |
| | Accompanying items | paper document(s) attached | electronic file(s) attached |
| IX-8 | Fee calculation sheet | ✓ | - |
| IX-17 | PCT-EASY diskette | - | Diskette |
| IX-19 | Figure of the drawings which should accompany the abstract | | |
| IX-20 | Language of filing of the international application | English | |
| X-1 | Signature of applicant, agent or common representative |  | |
| X-1-1 | Name (LAST, First) | PALMER, Meredith | |

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| 10-1 | Date of actual receipt of the purported international application | |
| 10-2 | Drawings: | |
| 10-2-1 | Received | |
| 10-2-2 | Not received | |
| 10-3 | Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application | |
| 10-4 | Date of timely receipt of the required corrections under PCT Article 11(2) | |
| 10-5 | International Searching Authority | ISA/EP |

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| 10-6 | Transmittal of search copy delayed until search fee is paid | |
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| 11-1 | Date of receipt of the record copy by the International Bureau | |
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ABSTRACT OF THE DISCLOSURE

An initiator is presented for anionically polymerizing monomers, to provide a functional head group on the polymer. A polymer having a functional head group derived from a sulfur containing anionic initiator, and optional as additional functional groups resulting from the use of a functional terminating reagent, coupling agent or linking agent is also provided. A method is presented for anionically polymerizing monomers comprising the step of polymerizing the monomers with a sulfur containing anionic initiator to provide a functional head group on the polymer. An elastomeric compound, comprising a functional polymer and filler is also described. Also provided is a tire having decreased rolling resistance resulting from a tire component containing a vulcanizable elastomeric compound.

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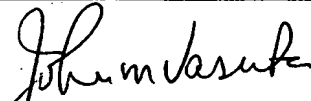


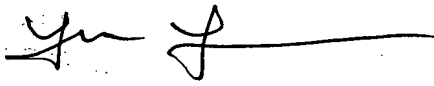

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|-------|--|--|
| 0-1 | PCT Power of Attorney (for an International application filed under the Patent Cooperation Treaty) (PCT Rule 90.4) | |
| 0-1-1 | Prepared using | PCT-EASY Version 2.92 (updated 01.07.2003) |
| 1 | The undersigned applicant(s) | BRIDGESTONE CORPORATION; HOGAN, Terrence; HERGENROTHER, William; YAN, Yuan-Yong; LAWSON, David |
| 1-1-1 | hereby appoints (appoint) the following person | PALMER, Meredith; VASUTA, John; TIDWELL, Greer; KROGH, Timothy Bridgestone/Firestone 1200 Firestone Parkway Akron, OH 44317 United States of America |
| 1-1-2 | hereby appoints (appoint) the following person | BOBAK, Donald Renner, Kenner, Greive, Bobak, Taylor & Weber First National Tower - 4th Floor Akron, OH 44308 United States of America |
| 1-1-3 | hereby appoints (appoint) the following person | REGINELLI, Arthur Renner, Kenner, Greive, Bobak, Taylor & Weber First National Tower - 4th Floor Akron, OH 44308 United States of America |
| 1-2 | as | agent |
| 1-3 | to represent the undersigned before | all the competent International Authorities |
| 1-4 | in connection with the international application identified below: | |
| 1-4-1 | Title of the invention | THE USE OF SULFUR CONTAINING INITIATORS FOR ANIONIC POLYMERIZATION OF MONOMERS |
| 1-4-2 | Applicant's or agent's file reference | P01090W01A |
| 1-4-3 | International application number (if already available) | |
| 1-4-4 | filed with the following Office as receiving Office | United States Patent and Trademark Office (USPTO) (RO/US) |
| 1-5 | and to make or receive payments on behalf of the undersigned. | |

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| | | |
|-------|------------------------|---|
| 2-1 | Signature of applicant |  |
| 2-1-1 | Name | BRIDGESTONE CORPORATION |
| 2-1-2 | Name of signatory | John Vasuta, Esq. |
| 2-1-3 | Capacity | Chief I.P. Counsel/Secretary (Asst.) |
| 2-2 | Signature of applicant |  |
| 2-2-1 | Name | HOGAN, Terrence |
| 2-3 | Signature of applicant |  |
| 2-3-1 | Name | HERGENROTHER, William |
| 2-4 | Signature of applicant |  |
| 2-4-1 | Name | YAN, Yuan-Yong |
| 2-5 | Signature of applicant |  |
| 2-5-1 | Name | LAWSON, David |
| 3 | Date | |